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2. **INVASIVE SPECIES: Tamarisk, cheatgrass worsen Southwest's biggest resource problems**

April Reese, *Land Letter* Western reporter

Invasive species can wreak havoc in every region of the country, causing ecological and economic harm from Florida to Washington. But in the Southwest, two species are exacerbating the region's two biggest natural resource challenges: water scarcity and wildfire.

Tamarisk, also known as salt cedar, has colonized almost every lower-elevation streambed in the Southwest and beyond. Some studies suggest the shrubby, feathery tree may be guzzling water at a faster rate than the native willows and cottonwoods it is crowding out. It also invites fire into the bosque, as Southwestern stream ecosystems are called, creating a fire risk in areas that historically rarely burned.

Beyond the riparian zone, cheatgrass, a wheat-like grass that has spread across the region's grasslands and foothills, increases the risk of wildfire wherever it appears. It greens up earlier than native grasses and dies off earlier, leaving fields of fuel just in time for the dry summer wildfire season in the West.

"The cheatgrass enhances fire risk in the mountain and grassland areas, and the tamarisk increases fire frequency and intensity in the riparian areas," said April Fletcher, invasive species coordinator for the U.S. Fish and Wildlife Service in Albuquerque, N.M.

With so much at stake, political leaders at the federal and state level have taken notice of the issue, and researchers and resource managers across the region are stepping up efforts to control the two invasives. But funding has been spotty.

In 2004, Congress passed the Noxious Weed Control and Eradication Act, but while the act authorized \$15 million for control efforts, for fiscal 2007, Congress has appropriated \$1.6 million.

Inconsistent and lackluster funding was identified as a problem in a [report](#) issued by the Government Accountability Office last year on invasive plants, which found that funding issues have hampered control programs.

Water hog in an arid climate

Tamarisk was purposefully introduced in the West to create windbreaks, for use as an ornamental, or to help prevent streambank erosion. However, since introduction, the plant has shown a less-benign side.

It accumulates salt and then releases it from the tips of its leaves, making the soil unsuitable for many native species. The plant also has long tap roots that allow it to access deep groundwater, monopolizing scarce water resources.

The tall shrub has now colonized approximately 1.5 million acres, according to data from Northern Arizona University.

According to USGS hydrologist Jonathan Friedman, tamarisk, which grows to a height of 12 to 15 feet, has taken over as the dominant species in river corridors throughout New Mexico, Arizona, Colorado, Utah, Nevada and in Southern California, resulting in decreased habitat for native plants and animals, changes in hydrology, water loss and a decrease in recreational opportunities.

Salt cedar also burns well and can create a tinderbox along Southwestern streams.

"The native bosque did not burn frequently, and it did not burn with high temperatures," Fletcher said. "With salt cedar that's what we have -- high-temperature burns with high intensity that basically burns everything."

In recent years, there has been an interagency effort to control tamarisk. The departments of Interior and Agriculture, along with

the National Invasive Species Council, hosted a conference of federal, tribal, state and local officials in Albuquerque in 2004 aimed at setting a blueprint for controlling tamarisk.

"It would be an understatement to say that tamarisk is a bad actor in these parts, and we need to run it out of town," Jim Tate, science adviser to the Interior Department secretary told attendees to that conference.

Agencies and volunteer groups have spent many hours cutting tamarisk and then applying herbicides to the trunk to prevent regrowth, but time-intensive controls have struggled to keep up with the spread of salt cedar. Researchers have had some success using the salt cedar leaf beetle to kill the trees, but there is some concern that it may be almost too effective: In the absence of native willows and cottonwoods, the endangered Southwestern willow flycatcher frequently nests in salt cedar, and removing the invasive trees may put them at greater risk.

For that reason, FWS has not allowed the bugs to be released along the Rio Grande, Fletcher said. In some locations where the beetle was introduced, "they have really spread and devastated the salt cedar, and we're concerned if it happened too quickly, it would destroy important nesting sites and seriously hurt the flycatcher population," she said.

Cheatgrass

Cheatgrass, which migrated to the United States from Europe and Asia in contaminated seed supplies in the late 19th century, has also spread rapidly across the West, invading grasslands, sagebrush flats and pinyon-juniper woodlands that have been disturbed by fire, construction work, poor grazing practices, off-road vehicle use, and other human activities.

Like tamarisk, it can increase the risk of fire. Cheatgrass germinates in fall and grows during the winter -- the opposite cycle of native bunchgrasses -- and then dies off by the end of July, creating dry fuel during the wildfire season. The fires often kill native grasses, but early-maturing cheatgrass seeds thrive on the nutrients the fire releases, producing copious amounts of seed.

A "Homeowners Guide to Cheatgrass" published by the The University of Nevada at Reno warns that the plant can be readily ignited by discarded lit cigarettes, welding activities, ricocheting bullets, catalytic converters on vehicles, fireworks or lightning. On a windy day, a cheatgrass fire can produce flames 8 feet high and travel 4.5 miles per hour, noted university soil scientists Jay Davison and Ed Smith.

Last summer, cheatgrass was partly responsible for the severity of the Winters fire, about 50 miles north of Winnemucca, Nev., which burned 238,458 acres of sagebrush and grasslands ([Land Letter](#), Nov. 2).

The spread of cheatgrass has been particularly hard on sage grouse, which already faces loss of habitat from urban development and oil and gas production. The invasive grass crowds out sage brush, which the birds depend on, and a cheatgrass fire can burn sage as well. Pronghorn are also affected by the spread of cheatgrass, said Kathryn Thomas, an ecologist with the Sonoran Desert Research Center in Arizona.

"Anytime habitat is reduced in any quantity, animals tend to suffer," Thomas said.

Difficult to remove

Applying herbicides is not practical on a large scale, because the chemicals can kill native grasses as well, Fletcher said. Small-scale incursions can be kept at bay by pulling the grass by hand.

Fletcher, for example, said she successfully removed cheatgrass on her property in New Mexico by pulling existing plants and new growth for several years. Using livestock to graze cheatgrass when it is green, and before it begins producing seeds, can also be effective, according to Davison and Smith.

Whatever controls are used, Thomas, who heads an effort to map cheatgrass, tamarisk and other invasives throughout the Southwest, cautioned that simply removing tamarisk and cheatgrass is not enough.

"When you remove a species, it's not just getting rid of the species -- it's also deciding what you want that community to be. You need to have a restoration plan. Because if you just get rid of the plant, invasives are just going to come back," he said.

[Click here](#) to read the GAO report on invasives.

Next week Land Letter continues this series with a review of invasive species legislation and some success stories in the control of invasive species.

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